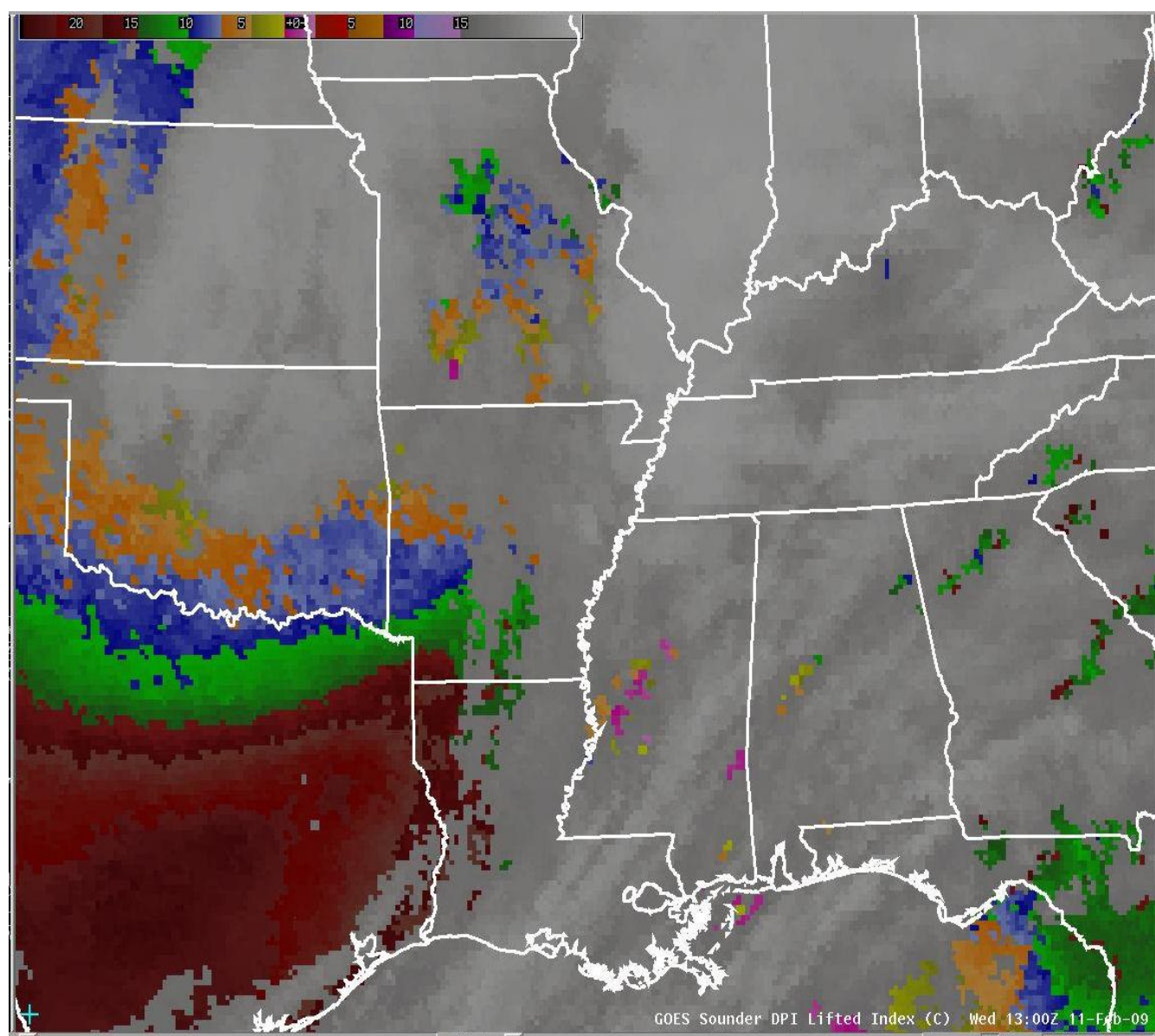
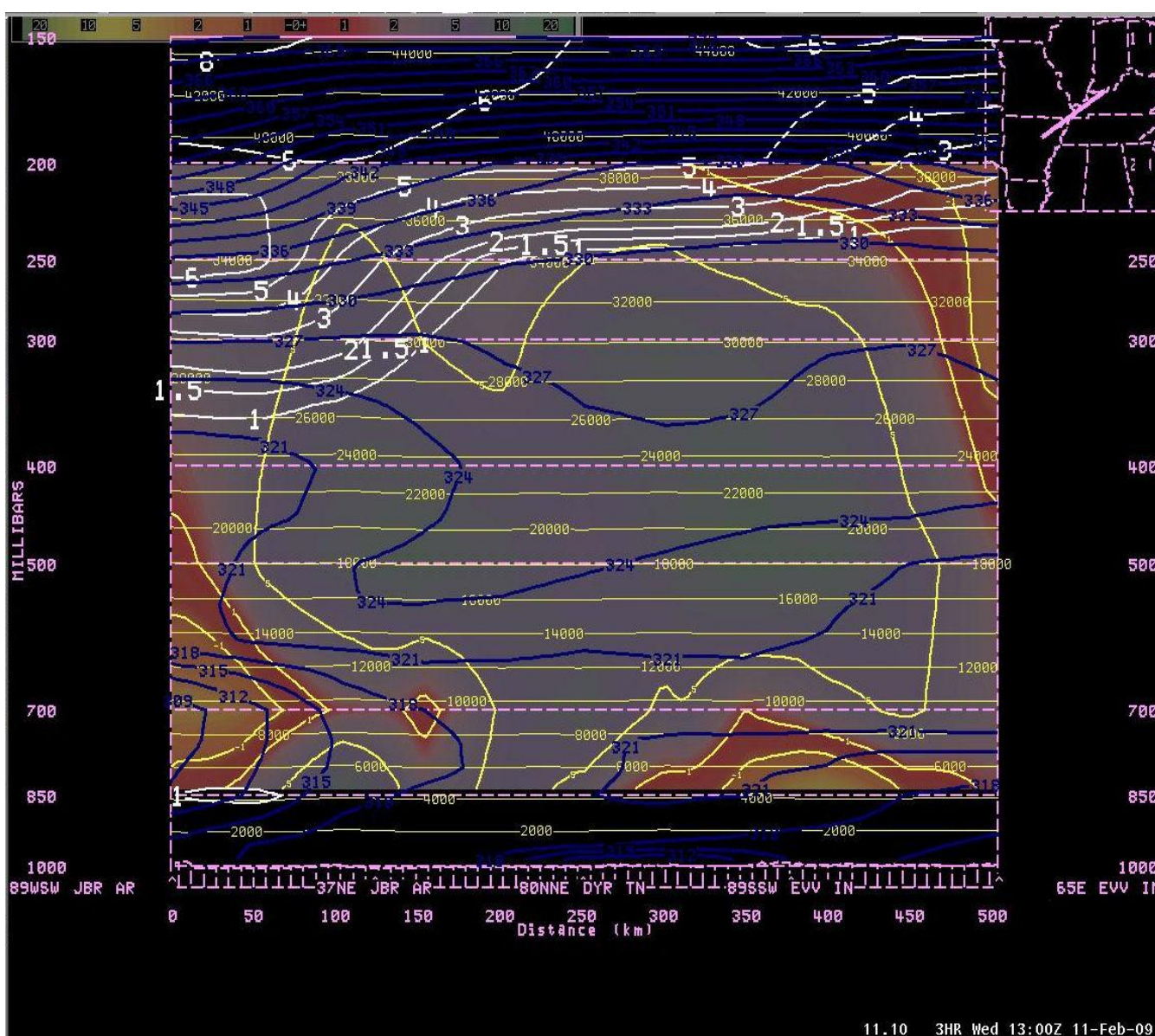
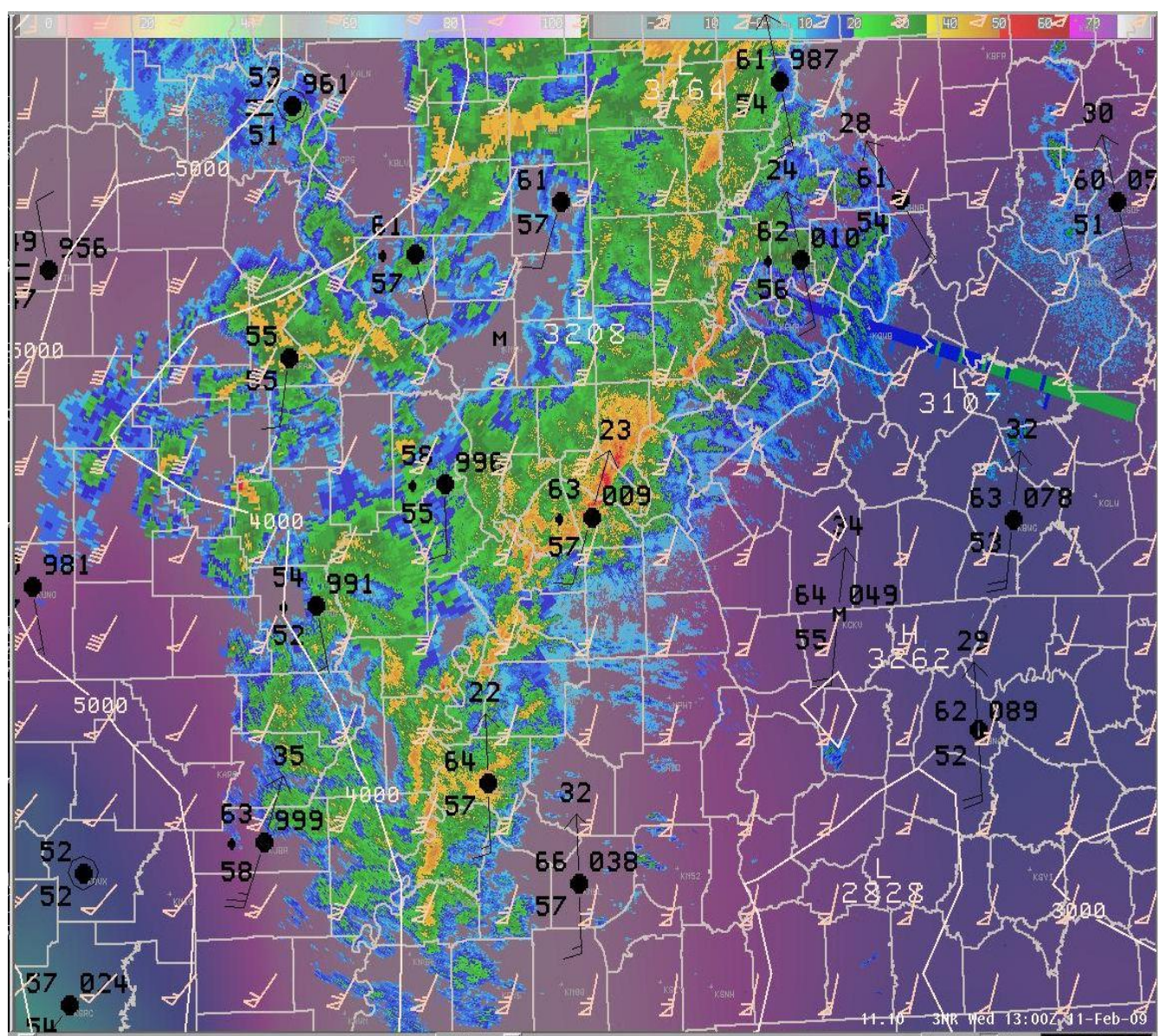
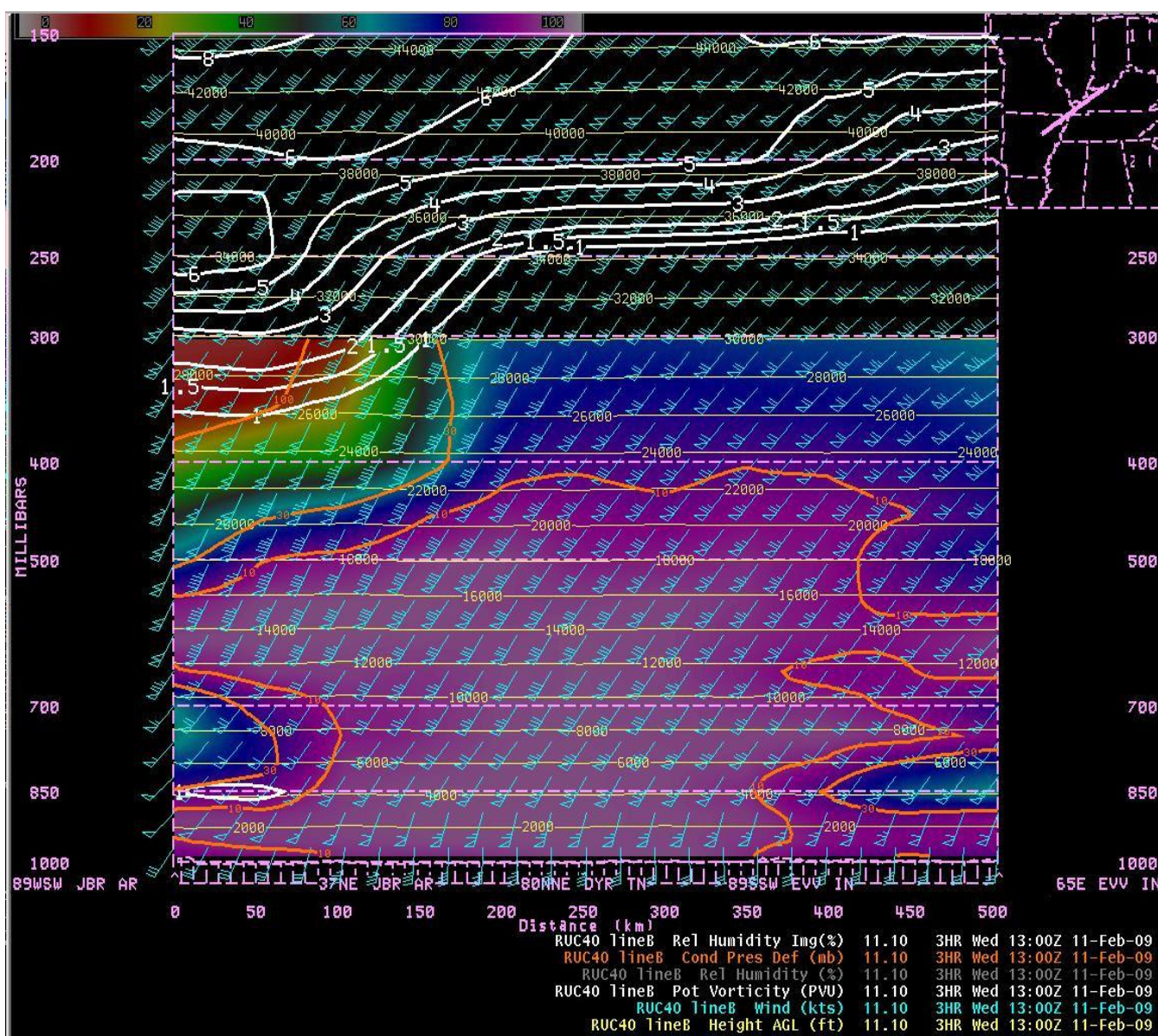
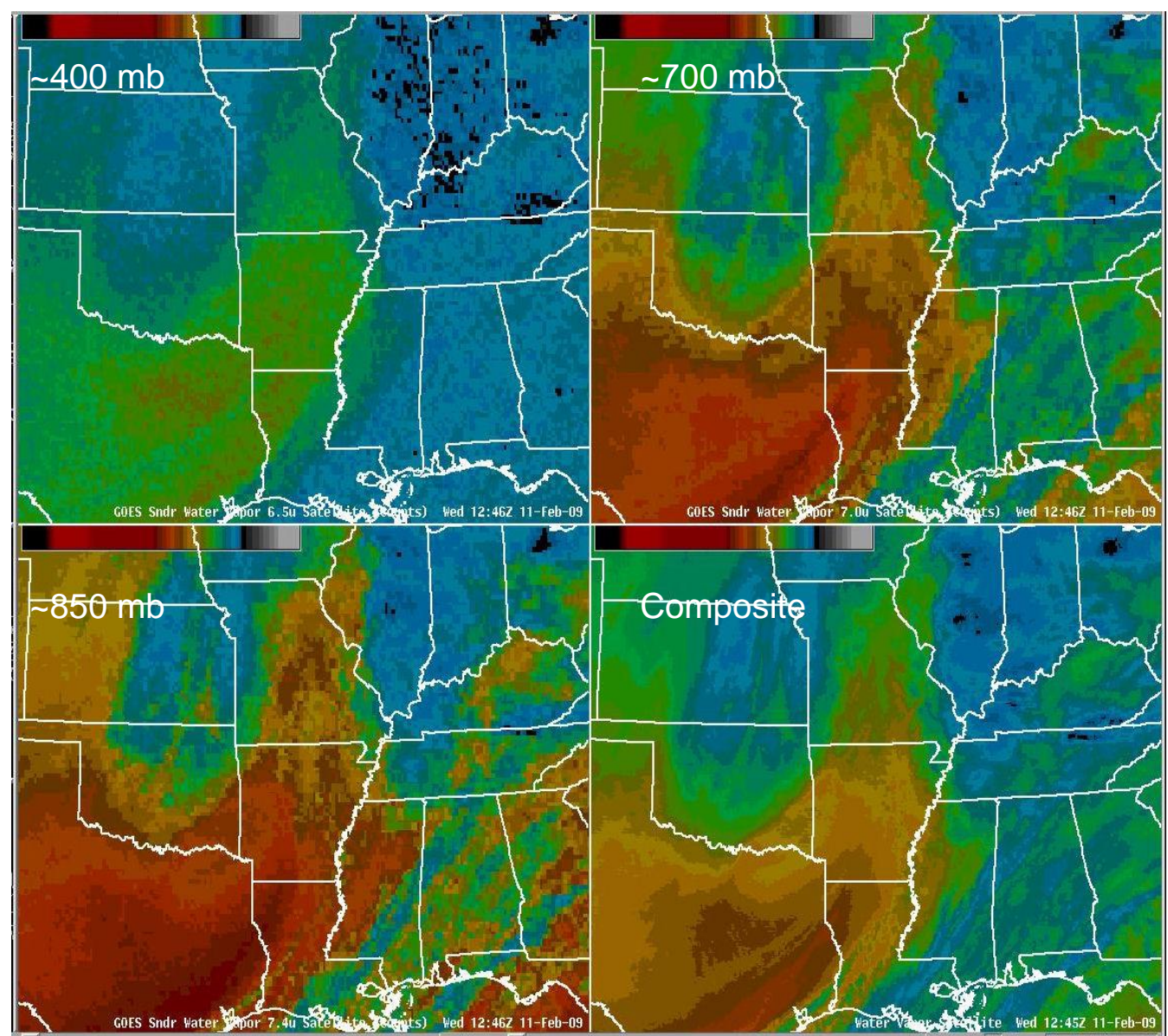


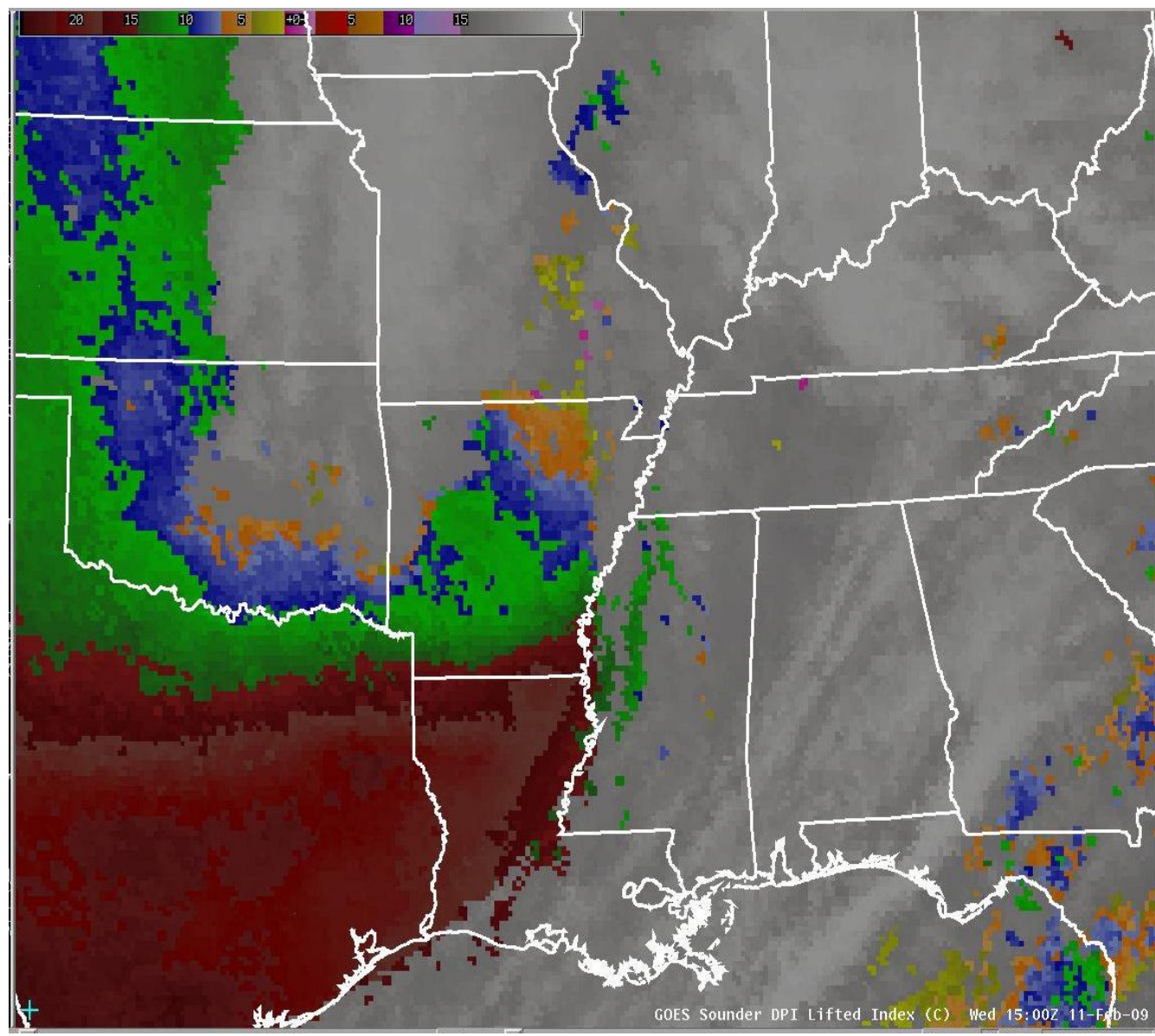
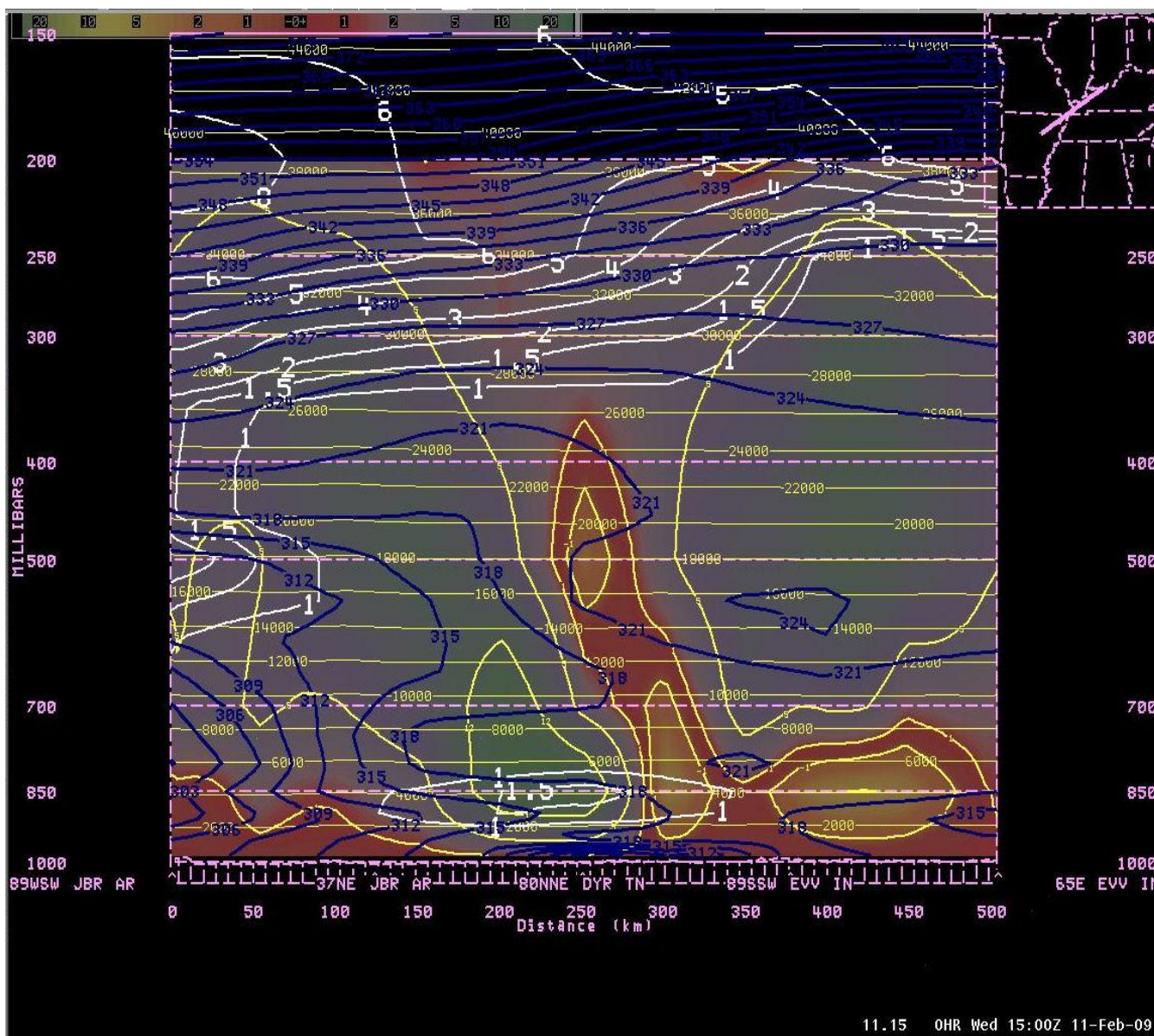
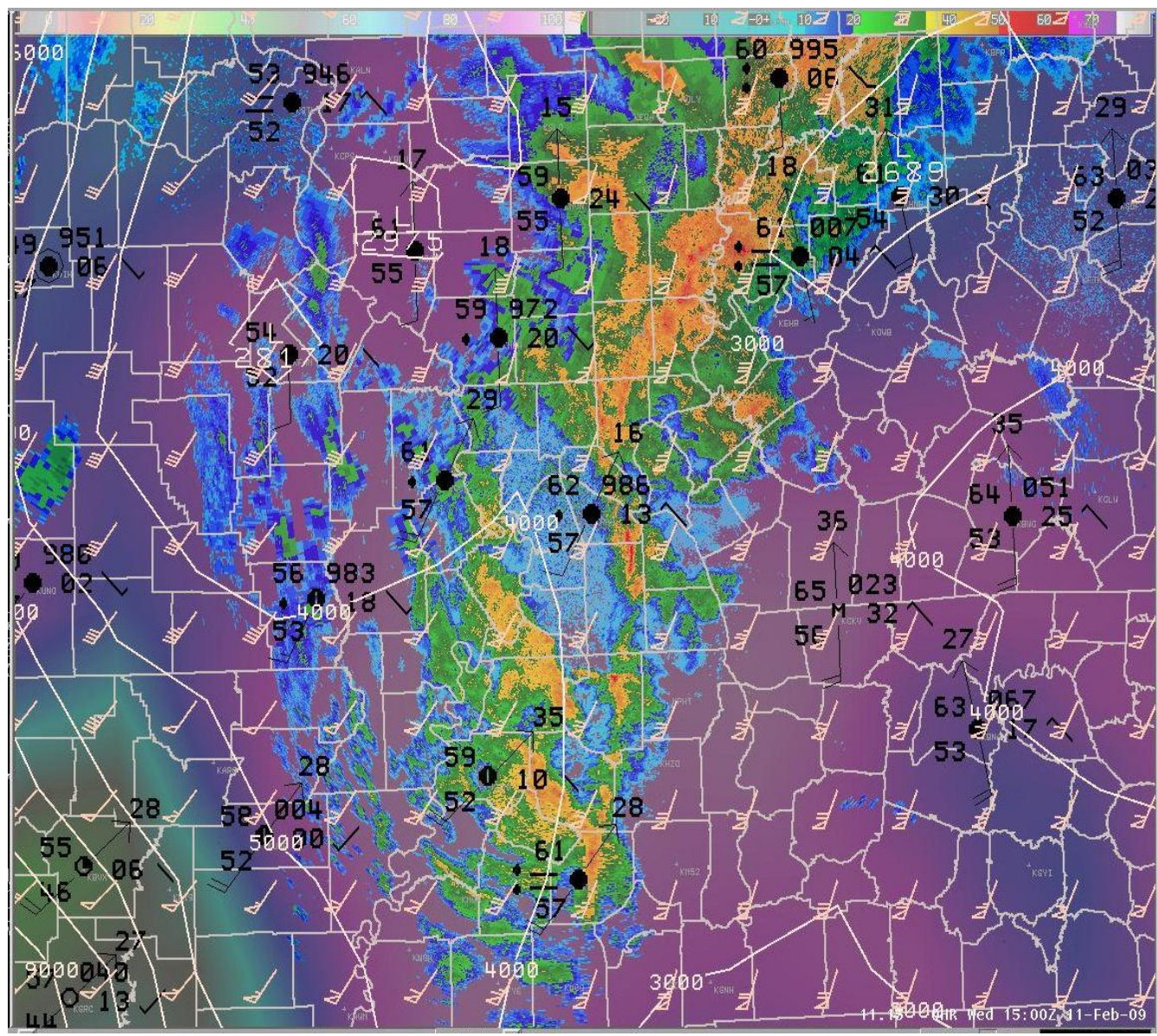
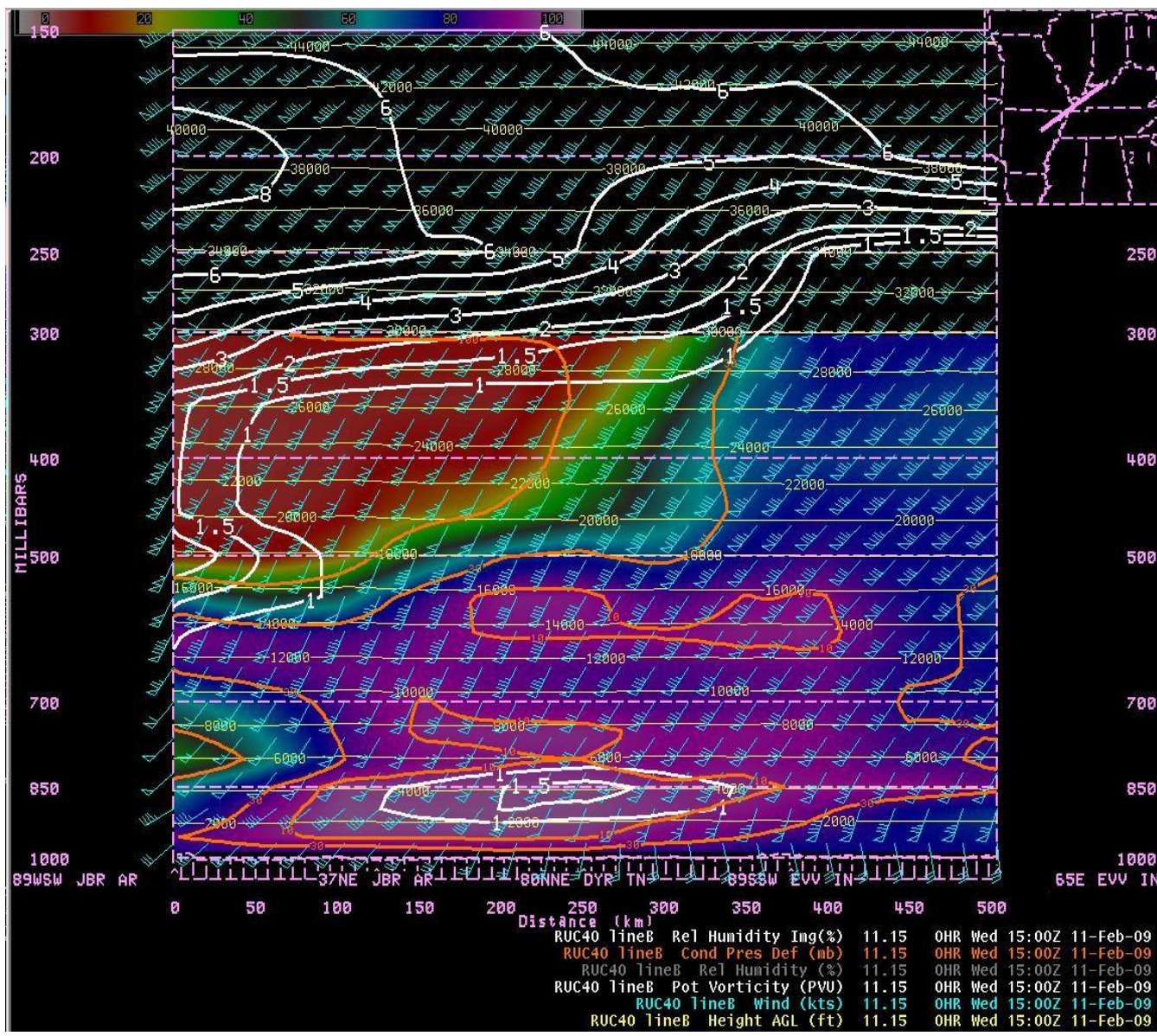
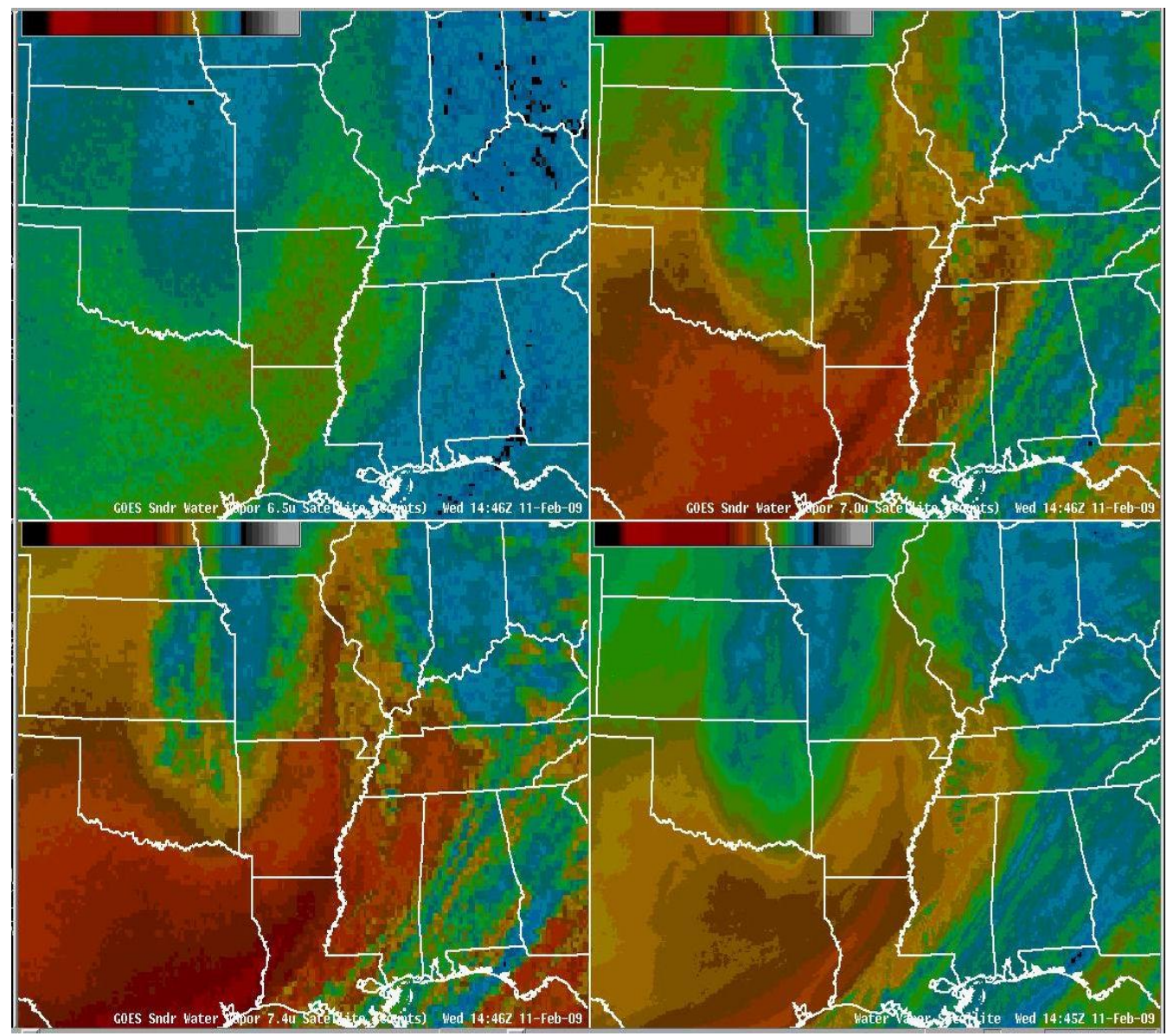
THE METEOROLOGY AND IMPACT OF THE 11 FEBRUARY 2009 WIND STORM IN THE LOWER OHIO VALLEY

13Z



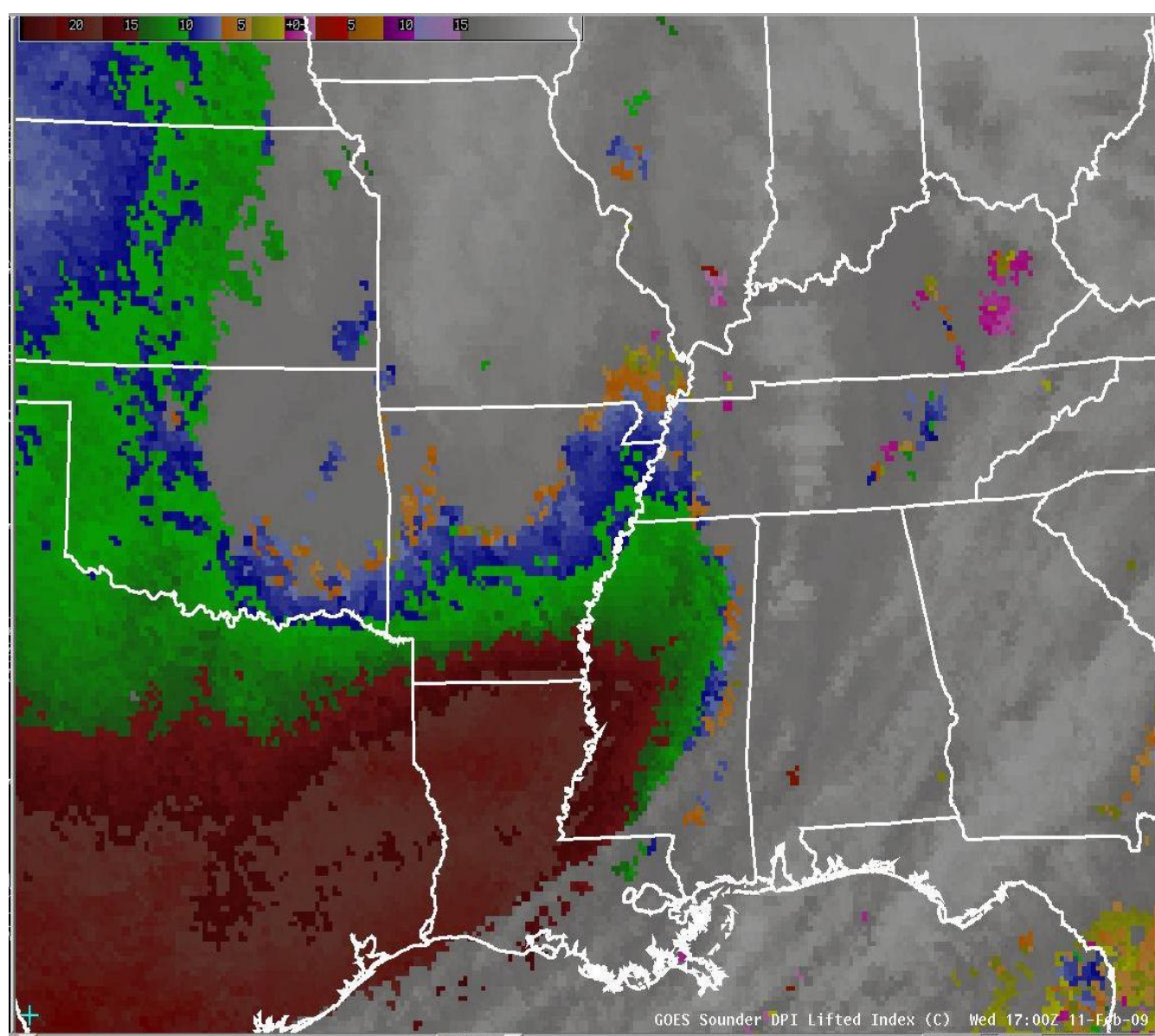
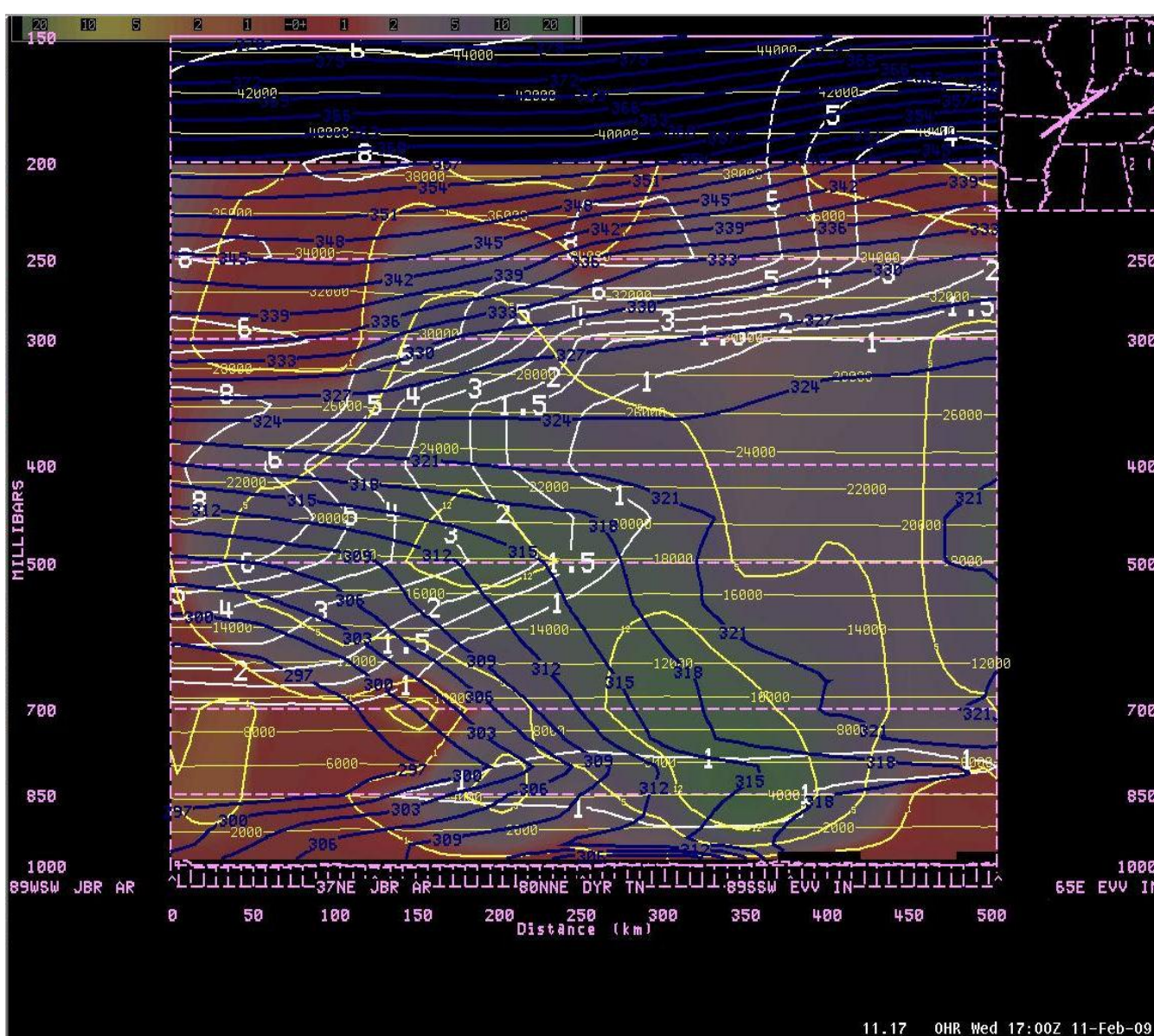
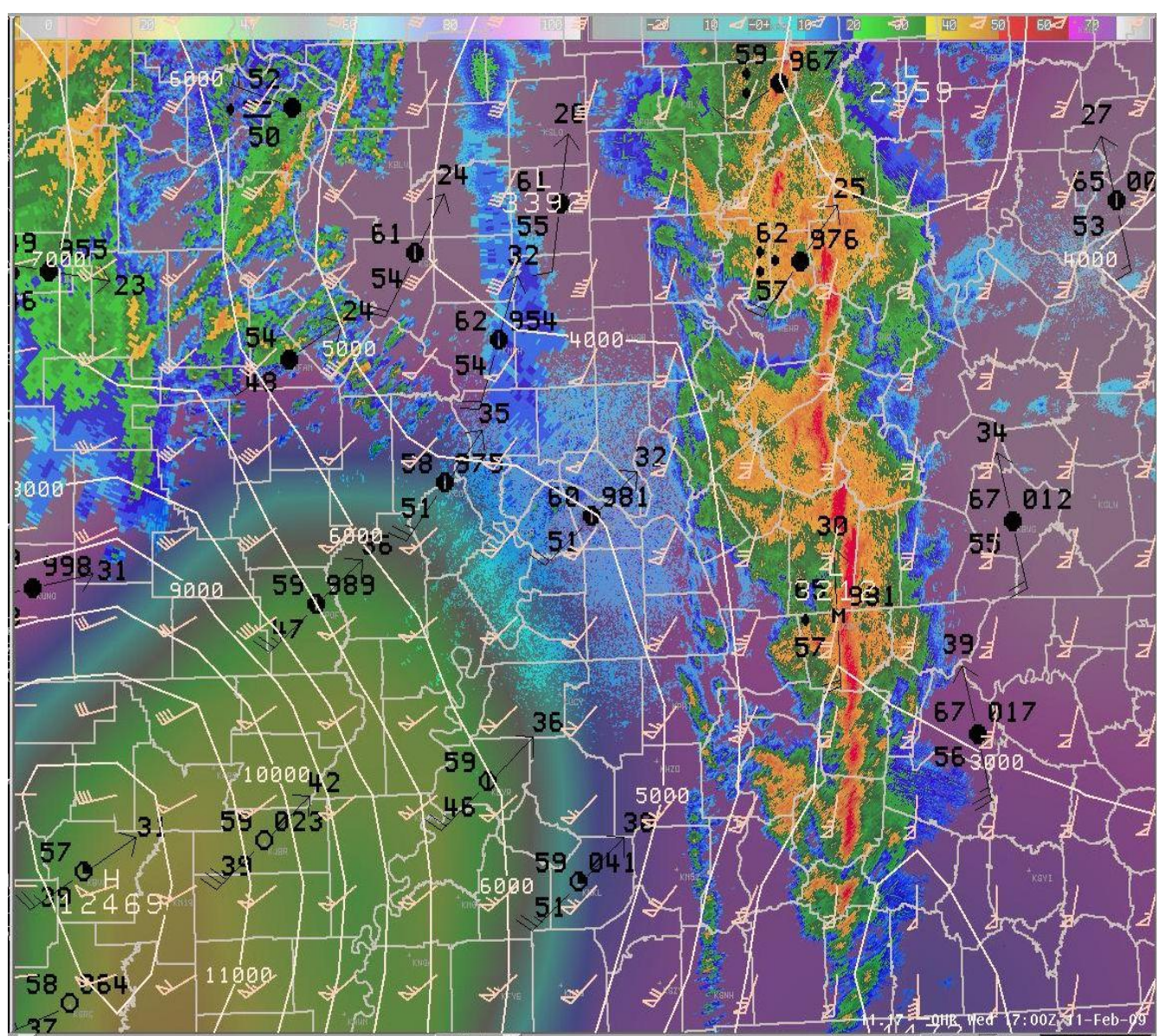
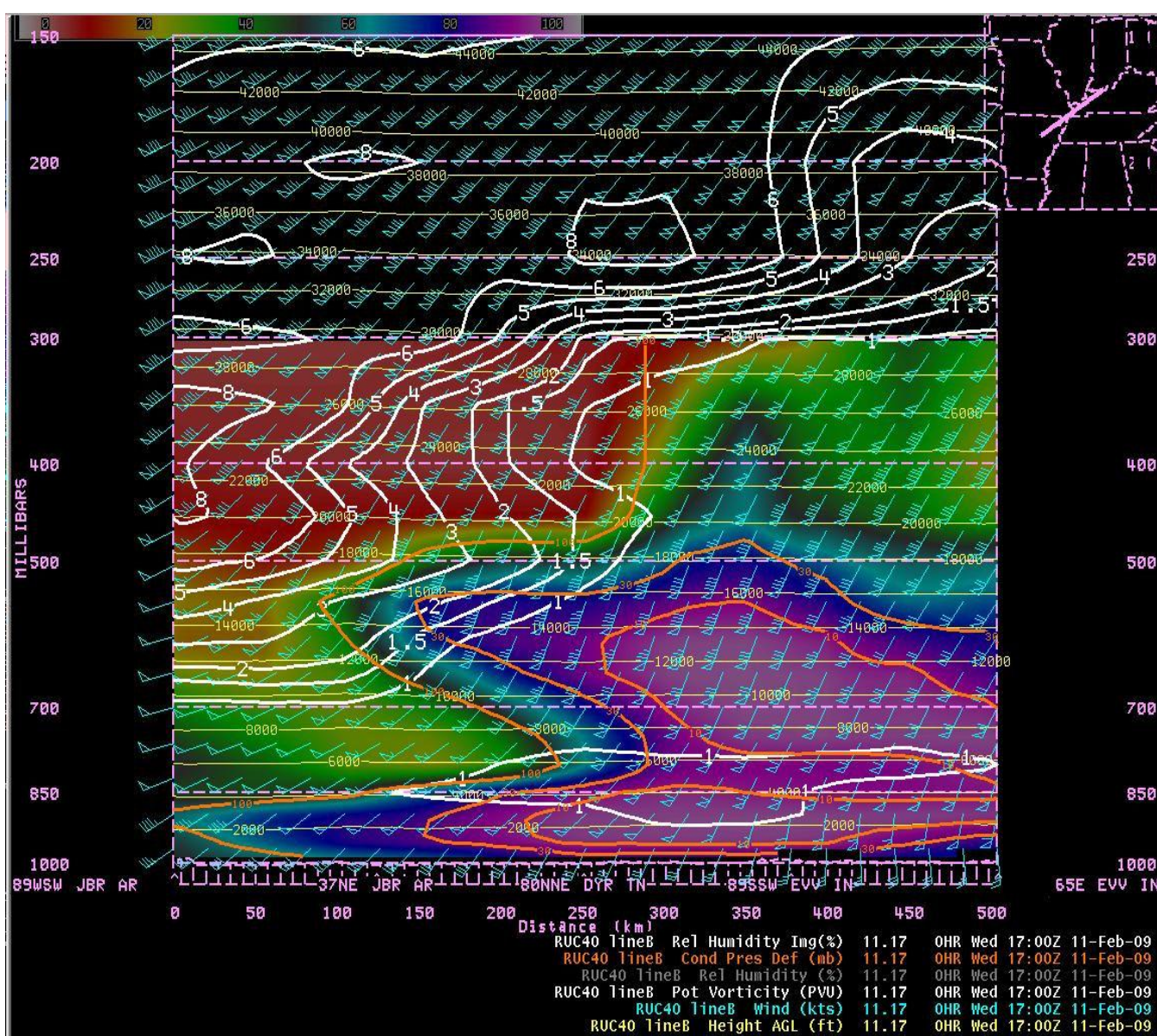
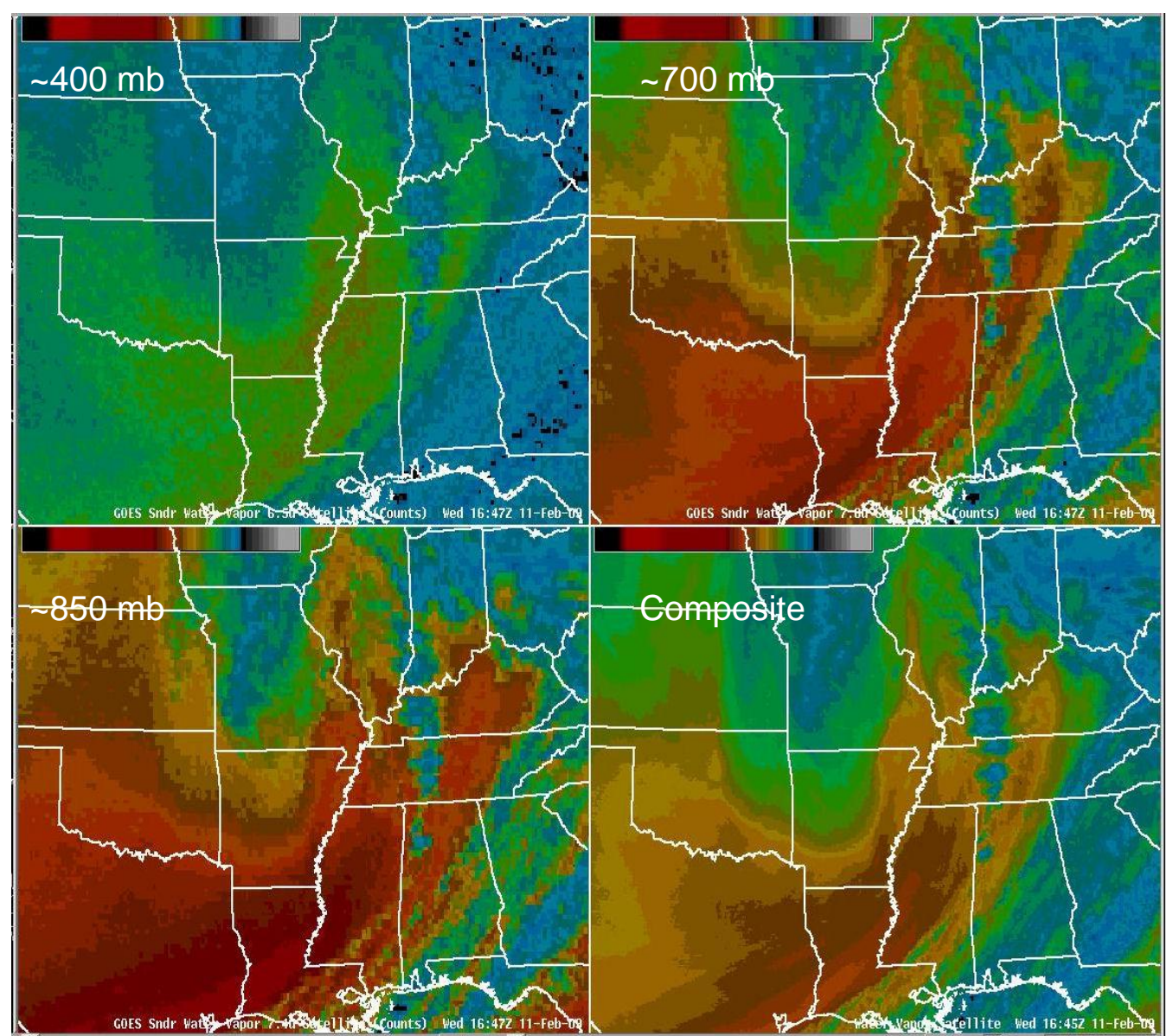
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15Z



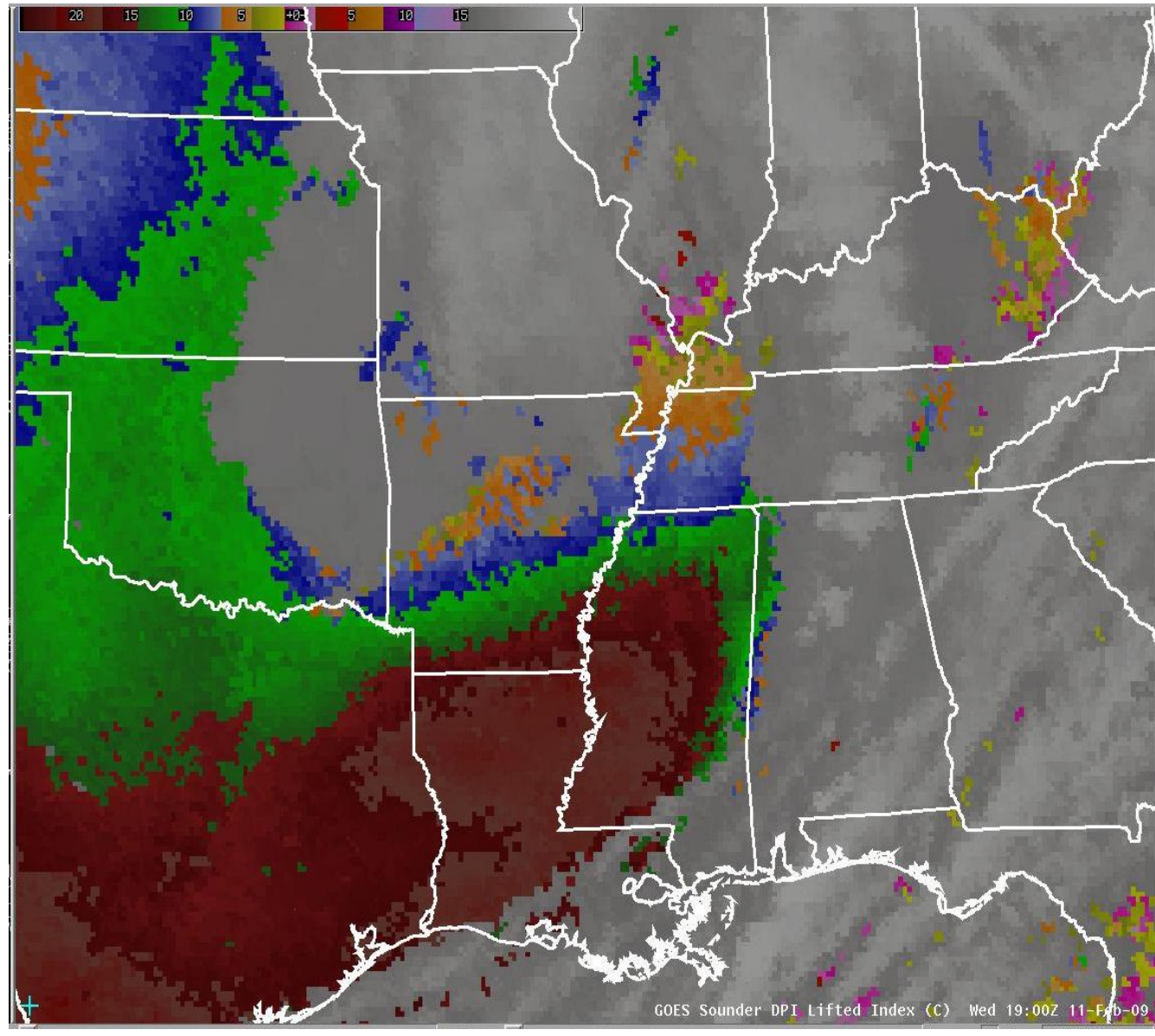
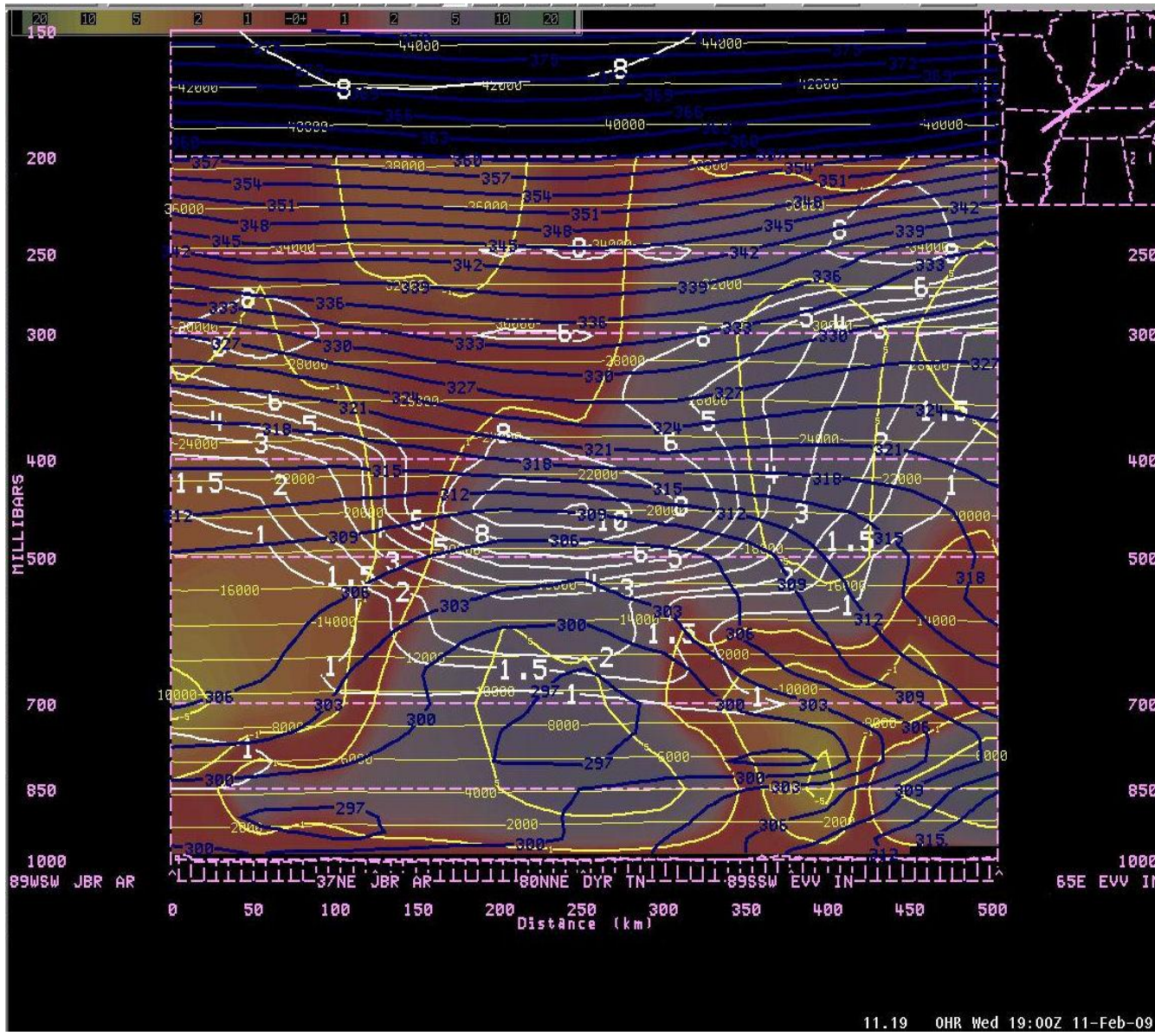
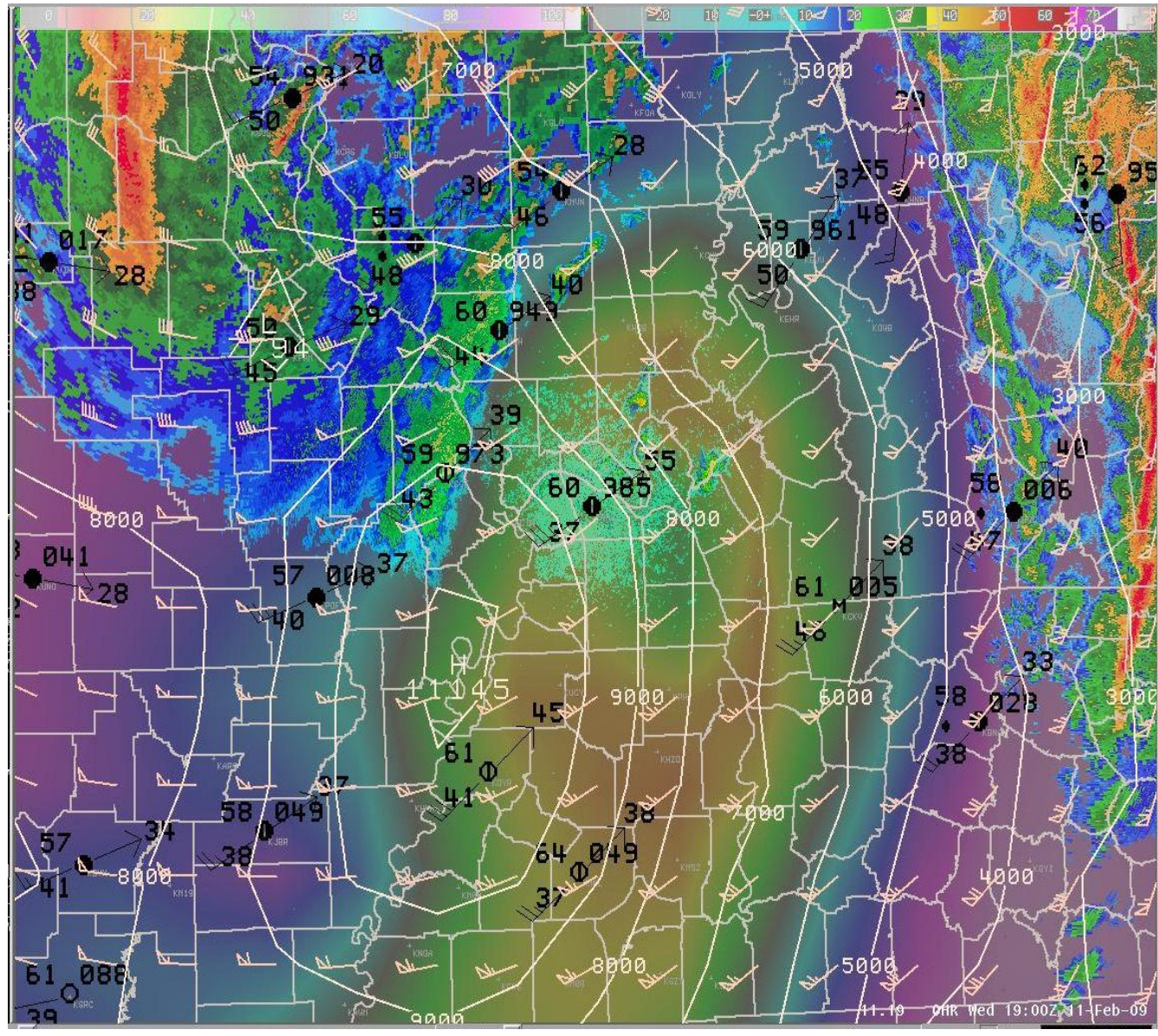
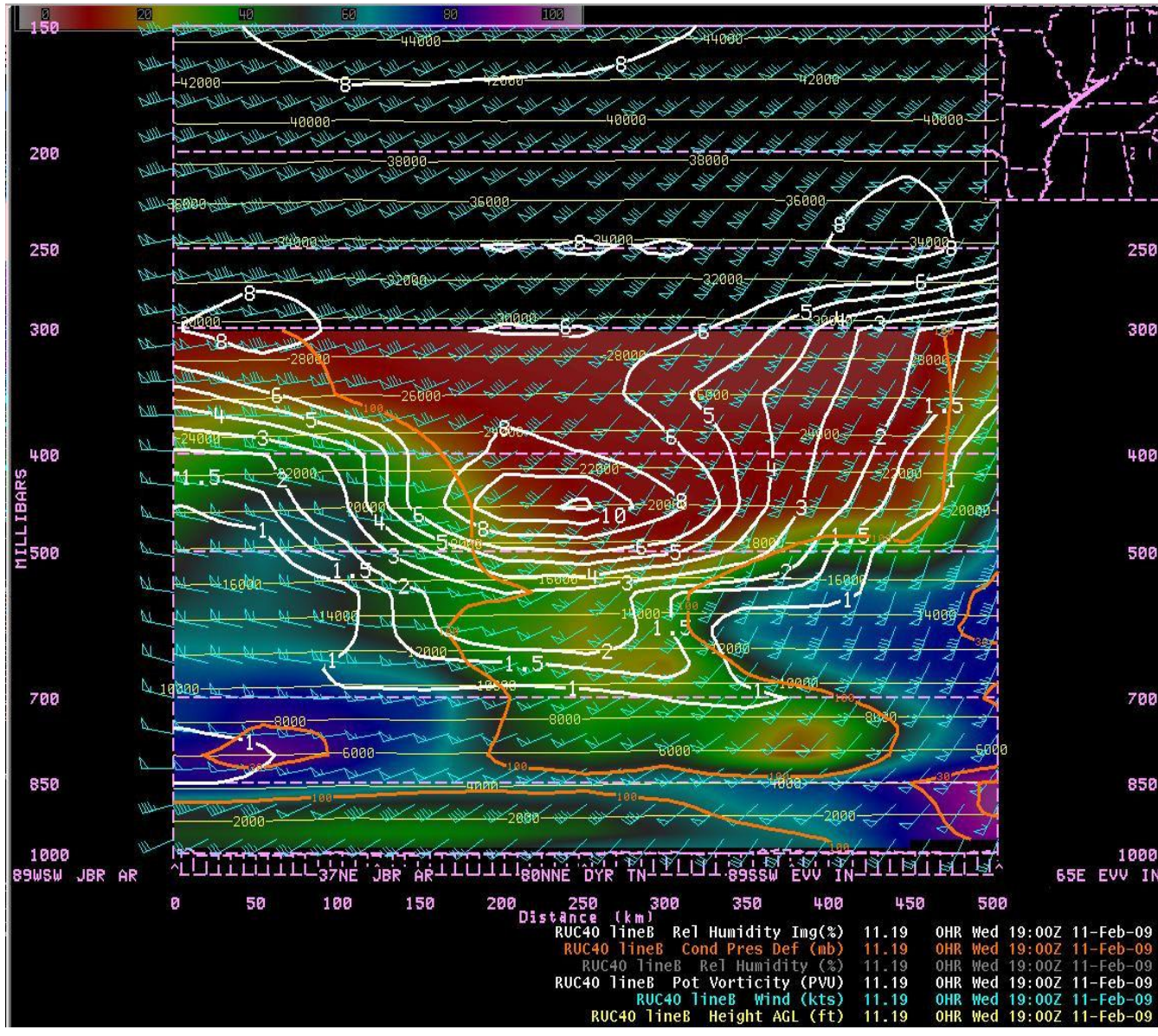
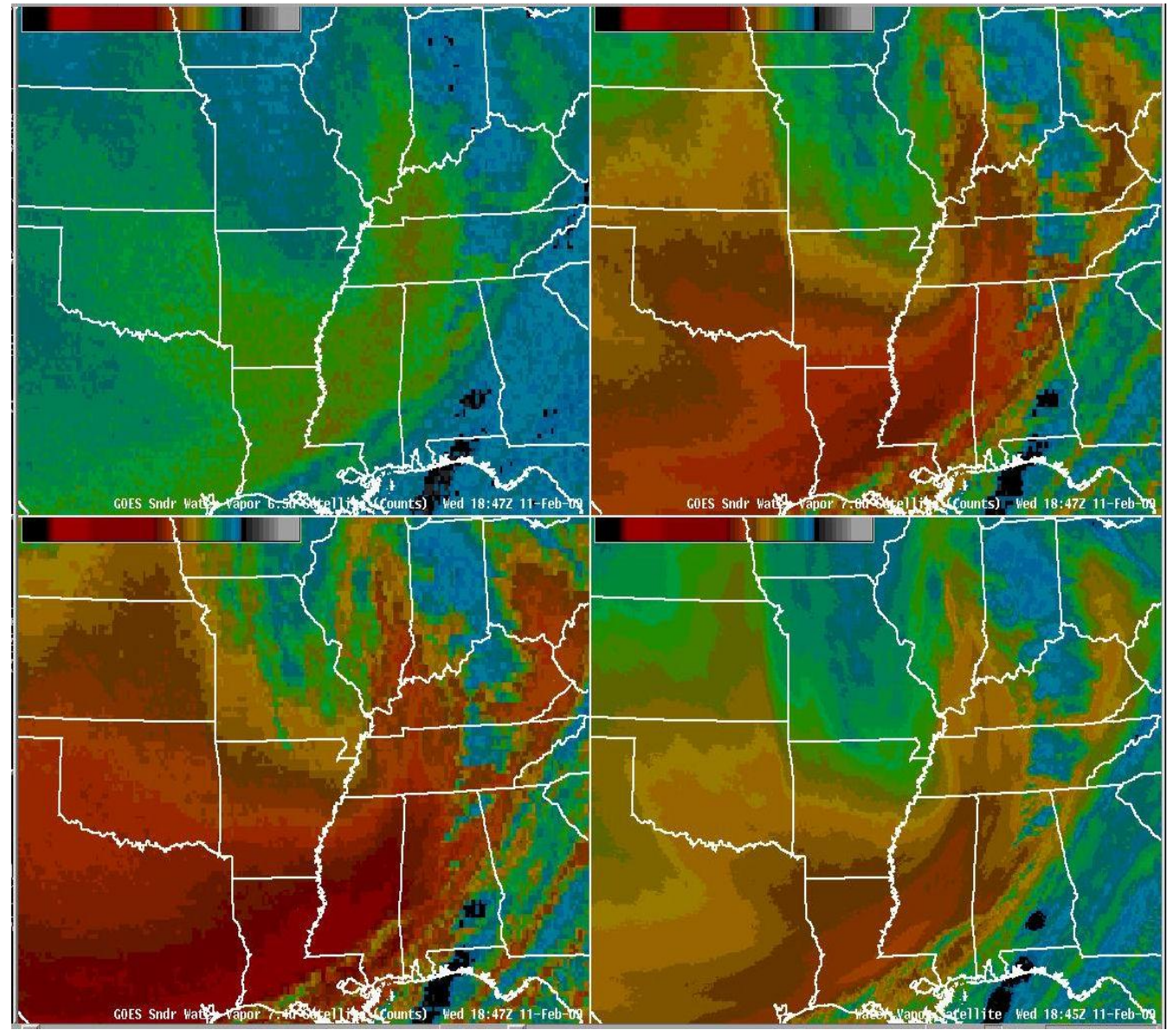
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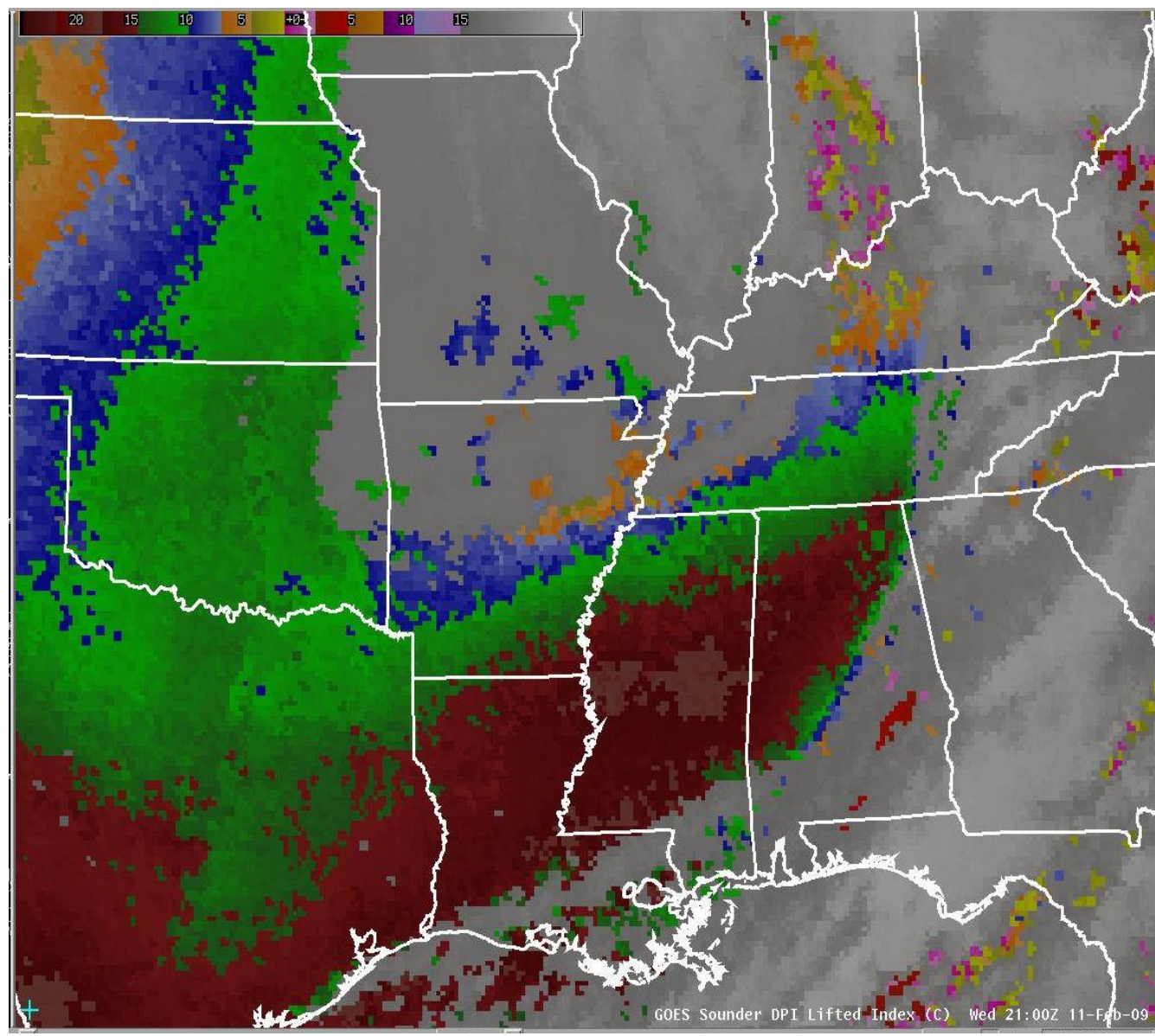
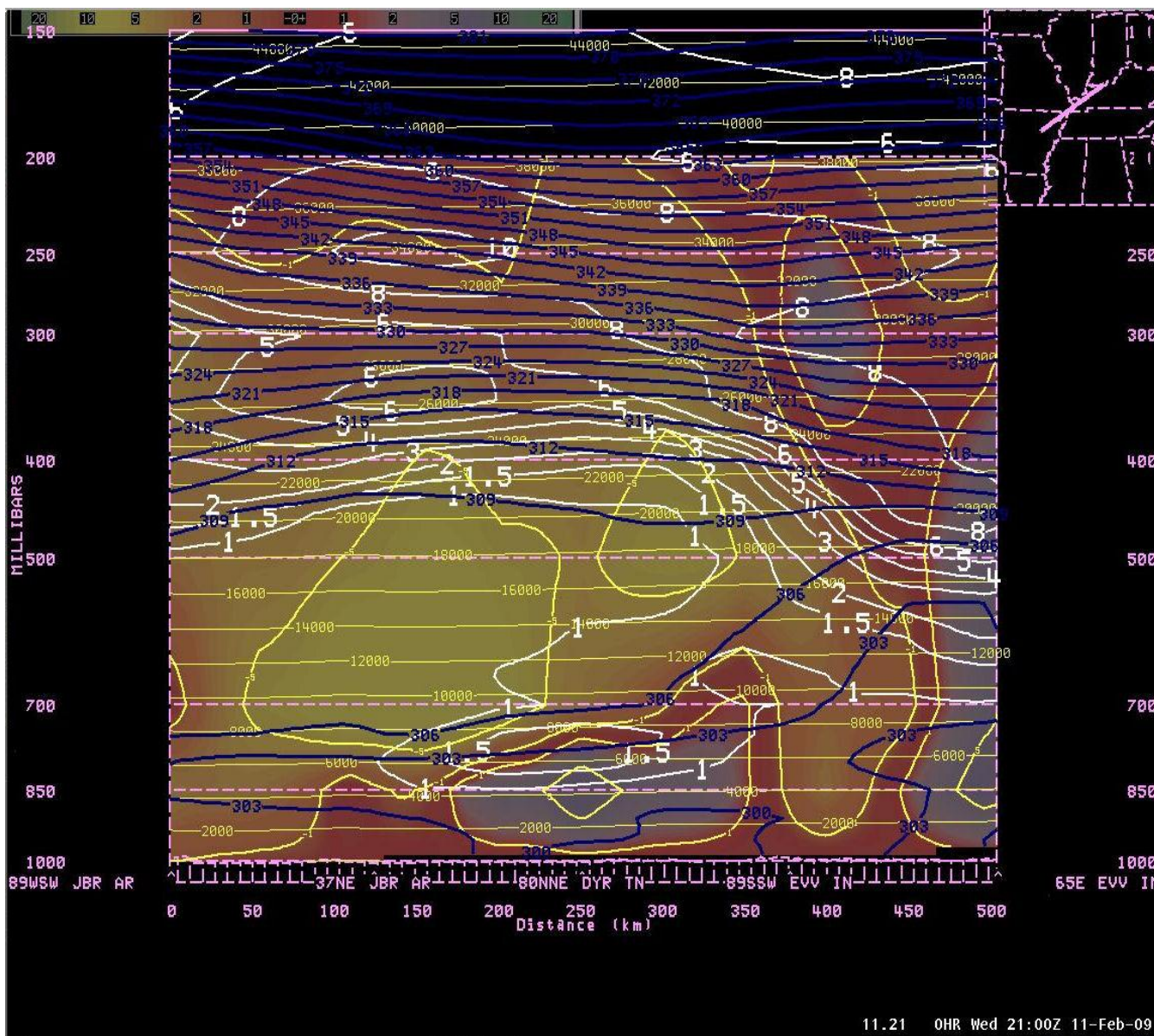
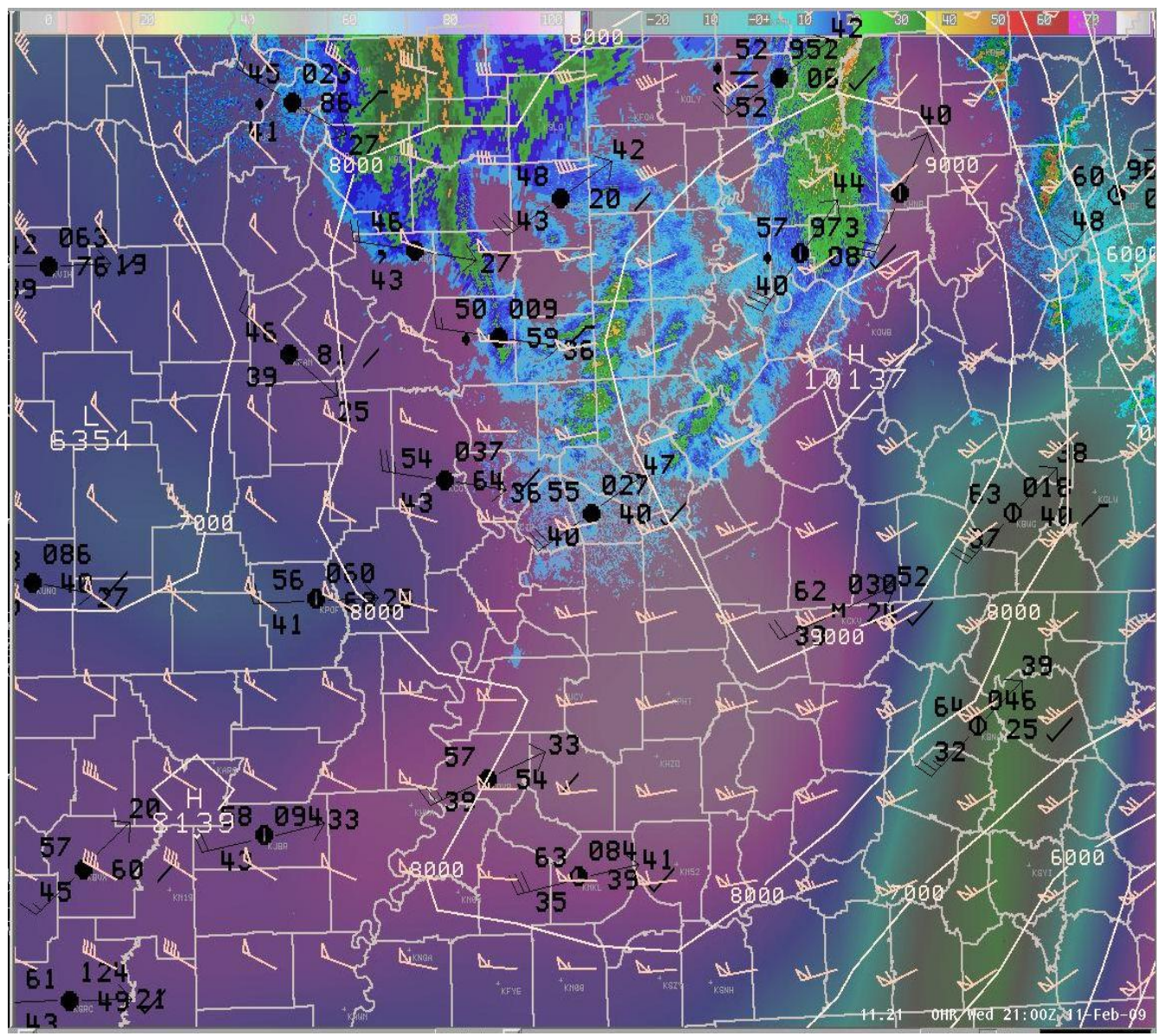
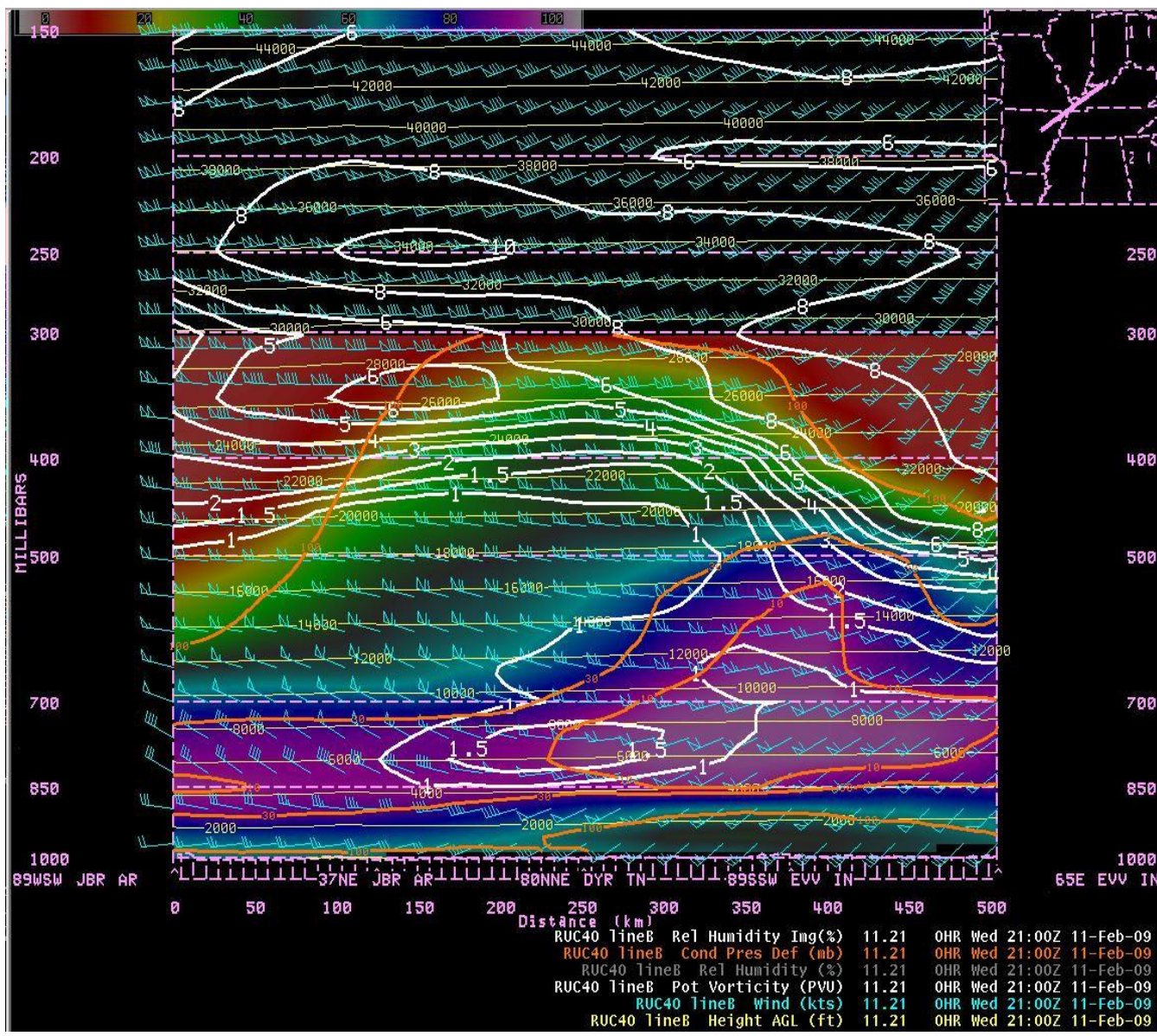
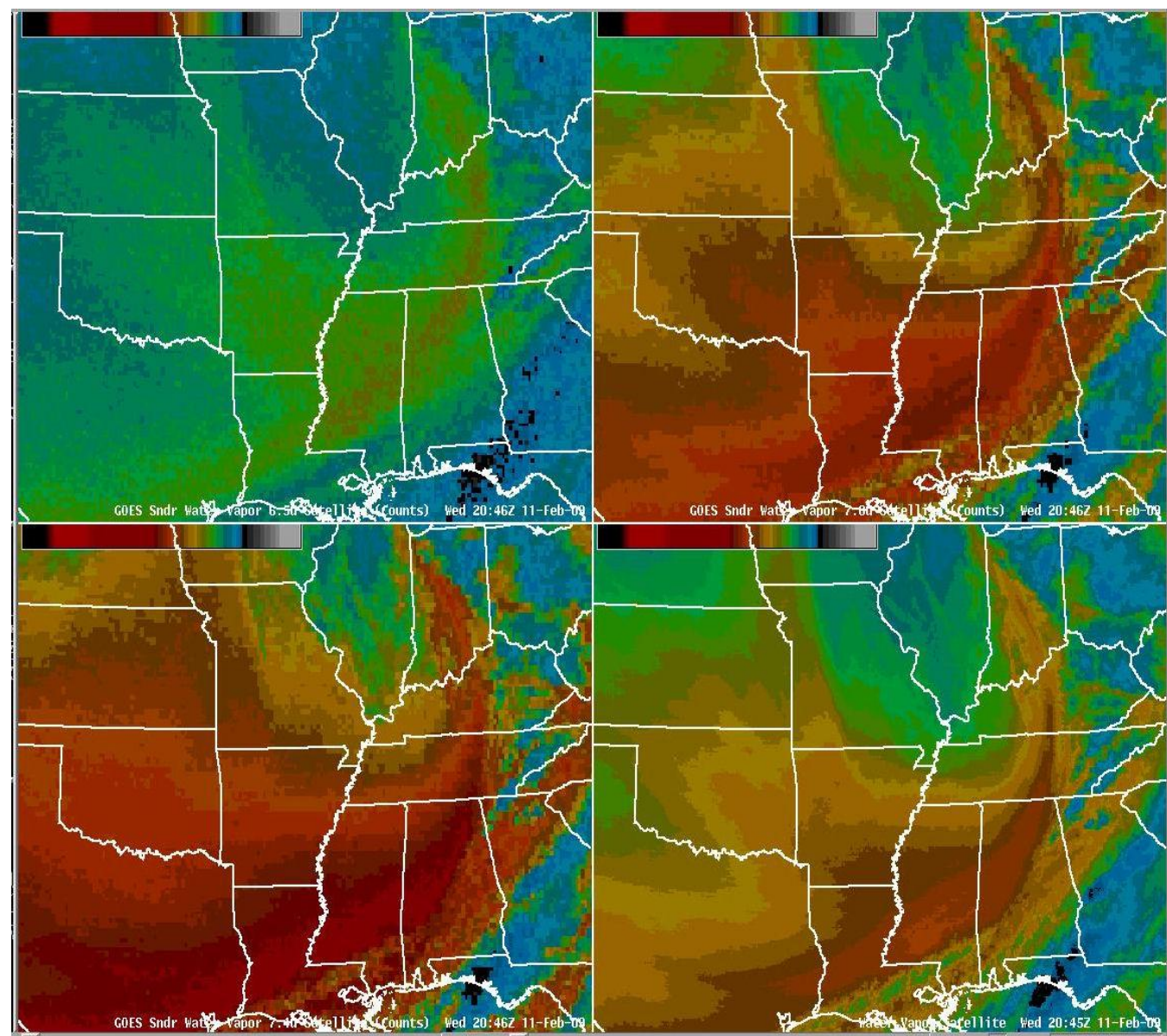
17Z

19Z



19Z

21Z



21Z

This multi-channel GOES water vapor imagery displays the downward translation of lower atmospheric moisture content (see dark red to gold color shade), from southwest TX toward the lower Ohio Valley, in advance of an upper level closed low in MO/KS. Between 17z-21z, the driest air intersected the WFO PAH CWA, during the time of greatest surface winds.

The 40km RUC KJBR-KPAH-KOWB x-section time (0 hr) series implies the downward transport of lower theta-e air parcels through the tropopause toward 850mb. Note the increasing PVU (bold white lines) and condensation pressure deficits (solid brown lines), as well as the lower RH (image). The wind profile (blue wind barbs) show the translation of the stronger winds toward the surface.

From observed upstream soundings, the 295K isentropic surface most closely reflects the base of the descending dry air layer moving toward the WFO PAH CWA. Peak surface wind gusts coincided with the leading gradient of RH, mainly in the 40-60% range. The 295K height, shown as solid white lines, indicate the relative location of air parcels carrying the 295K winds toward the surface.

This time series displays the relative static stability and implied vertical motion of air parcels in relationship to the descending jet maximum moving along the KJBR-KPAH-KOWB axis. PVU (solid white lines) and equivalent potential temperature (solid blue lines), as well as omega (red and yellow image = rising motion; blue and grey = descending motion) show stability of the descending parcels toward the surface.

Another measure of atmospheric stability, illustrated by the time series of GOES Sounder DPI of Lifted Index, is displayed here. The most stable air, with values near 20C, increase in coverage with time, implying a larger scale lowering of stable air. Likewise, unstable air in the vicinity of the upper low is implied with the zero to negative lifted index values over the WFO PAH CWA through at least 19z.



